AMERICA'S STRUGGLE FOR ELECTRIC POWER

By JOHN BAUER, Ph. D.

LEAGUE FOR INDUSTRIAL DEMOCRACY

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THE LEAGUE for Industrial Democracy is a membership society engaged in education toward a social order based on production for use and not for profit. To this end the League conducts research, lecture and information services, suggests practical plans for increasing social control, organizes city and college chapters, publishes books and pamphlets on problems of industrial democracy, sponsors conferences, forums, luncheon discussions and radio talks in leading cities where it has chapters.

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America's Struggle for Electric Power

by

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PREFACE

TODAY in America increasing numbers of men and women are urging the socialization of the key sources of economic power as a means of bringing about a life of security and plenty for all.

One of the most important sources of power is our electrical energy. Throughout the country, a battle royal is now taking place between those who regard our electrical industry as the rightful private preserve of the few and those who regard it as a public service, and who insist that it be owned and operated by the public and run for the common good.

Dr. John Bauer, one of the foremost authorities in the country on our public utilities, here describes that battle and some of the reasons therefor; clearly depicts the utter failure of our profit-takers to administer the electrical industry in the interest of consumers and workers; shows how all attempts thus far made effectively to regulate the industry have broken down and outlines a program for public ownership.

In such a program, Dr. Bauer would have local communities take charge of the business of distribution with the states and other regional groupings in charge of the important function of electrical generation and transmission.

We are deeply grateful to Dr. Bauer for this scholarly analysis of the present electrical situation and the way out. We are planning from time to time to issue further pamphlets dealing with the socialization of other phases of our economic life.

HARRY W. LAIDLER.

AMERICA'S STRUGGLE FOR ELECTRIC POWER

I. PRIVATE MANAGEMENT OF A PUBLIC SERVICE

WITHIN a single generation electric power has passed through the experimental stages, and has become a basic factor in practically every phase of industry, commerce and social life. It has given the distinctive characteristic of "power age" to the present economic era. If rationally organized and controlled, supplemented with other provisions for economic security and stability, it could furnish a national economy of plenty.

The beginning of the industry practically dates back only to 1880. Within a period of about a half century it has risen to virtual dominance in the country's economic life. The following summary table pictures the great developments since 1900[1]:

	1902	1912	1922	1929
Generating capacity installed—thousands kilowatts	2,383	7,211	17,978	28,968
Electricity generated—millions kilowatt hours	4,768	17,572	47,654	97,352
Electric revenue—thousands dollars	77,350	264,475	936,852	1,938.500
Number of customers—thousands	583	3,838	12,710	24,150
Average pounds of coal used per kilowatt hour generated	6.7	4.4	2.5	1.7

This extraordinary expansion has been due to technological advance, with its rapid cheapening of costs and with the increasing adaptability of electricity to more and more purposes. Progressive technology has not only revolutionized the electric industry itself, but has produced parallel developments in electrical equipment.

Within the industry, the advancement has been rapid in every basic process,—production, transmission and distribution. Production or generation of electricity has proceeded at an accelerat-

[1] These figures are taken from the Statistical Abstract of the United States, except that for 1929 all the items but electricity generated were taken from the reports of the National Electric Light Association.

ing rate. On the average, there has been a turn-over of efficiency in plant apparatus every ten years or less. This short cycle has been due to change in type of plant units as well as to increase in size, with consequent obsolescence in installed plant facilities. The rate of progress apparently has not yet abated.

Reducing Costs

BEFORE 1900 the most advanced practical unit of generation consisted of a combination of reciprocating engine and generator with a maximum capacity of about 2,000 kw (kilowatts). By 1902 a new type of unit had been developed, the steam turbine being used for operating the generator in place of the reciprocating engine. The size of the unit had advanced to 5,000 kw. By 1912 the new type of unit had been increased to about 20,000 kw and by 1922 to 50,000. Seven years later, at the beginning of the depression, combination units were installed with a capacity of no less than 150,000 kilowatts.

Parallel improvements were made during these years in practically all other kinds of power plant equipment. These improvements were particularly important in boiler design, reaching increasingly larger capacities, higher temperatures, and greater pressure, and developing accessories for the saving of coal, other materials, and labor. The large variety of plant improvements during the last generation have effected progressive economies both in required capital outlay and in the cost of output.

Notwithstanding the rapid rise in prices during and after the war, the technological advance in the industry offset the mounting cost of labor and materials in plant construction. Roughly, the efficient capital expenditure per kilowatt of capacity of a thoroughly up-to-date plant is today about $80 per kw, compared with about $100 just before the war and $120 in 1900.

The real significance of advancing power plant technology appears in relative cost of output compared with basic capital outlay. With each step of progress there has been a reduction in the amount of coal or other fuel required per kilowatt hour generated, together with a decrease in the amount of labor and supervision. The fuel requirement in a thoroughly modern plant has declined from about *five* pounds per kwh generated in 1900 to less than *one* pound just before the depression.

The most recent development in generation has been the practical application of the combination of mercury-steam units. By using mercury in the boiler, high temperatures are attained at low pressure. The mercury vapor is used in the first instance to drive a special turbine; then it is used to generate steam to drive a steam turbine. Through this combination and recent boiler improvements, the present attainable efficiency has come to nearly one-half pound of coal per net kilowatt hour generated. At this efficiency all previous types of existing steam units are largely obsolete. With economic recovery, new large plants should be constructed throughout the country, and the total output cost reduced to about 60% of what had been attained in the best plants prior to the depression. Here is a tremendous economic factor for the future welfare of the country.

Even without mercury-steam units, the total over-all cost of generation in a modern large central station is only about 7 mills per kilowatt hour. With the mercury-steam units, this can be reduced to 5 mills or less. The mere production of power, therefore, is cheap,—but this fundamental fact is not commonly realized. No community or locality need depend today upon water power for cheap electricity.

Progress in generation of electricity has been matched to a large extent in transmission and distribution. In 1900 the distance to which electricity could be carried economically was limited to a range of 50 miles or less. Now a practical distance of about 300 miles has been attained, and, according to recent public announcements, it may soon be extended to a radius of 1,000 miles. Today the essential costs of producing and delivering power are sufficiently low to make electricity available for almost all ranges of activity for which efficient appliances have been developed.

The Industry Expands

ALL these developments have produced rapid expansion in applying electricity to an ever-widening range of uses. To a large extent, the advance has been competitive, especially in use of electricity for manufacturing and heavy industrial purposes. Electric power was particularly compelled to win its way against long established steam or water power used in factories

and mills. To develop this industrial business, low rates have been granted, and vigorous efforts have been made to attach customers and to hold them. Consequently, rates for large industrial power use have been fixed low, practically at minimum cost of production, and in some instances probably lower than warranted by basic costs.

While the business has been active in building up highly competitive industrial loads, it has neglected other important purposes to which electricity could be economically extended or greatly increased in use. It has not been progressive in developing non-competitive consumption, including commercial, small power, municipal, and particularly residential uses. In all non-competitive areas rates have been kept high because the possibilities of expansion through low rates and other promotional efforts have not been fully realized, and because of unwillingness to sacrifice immediate revenues for long-run development. The managements have been largely controlled by present returns rather than long-range considerations.

For example, the possibilities of greatly extended use for the convenience and comforts of every home have been largely neglected. Residential rates have been kept on such a high level as to compel strict economy in most homes in the use of electricity for such important purposes as cooking and refrigeration. As a result of this limited use, the average residential consumption throughout the country is now only about 40 kilowatt hours per month per family. This could readily be increased more than *fourfold* if rates were reduced to the extent permitted under present technology and costs. In this field there is tremendous room for expansion. The small consumers are kept from becoming large ones by restrictive rates.

Besides the residential possibilities, there are undeveloped areas in many other directions. For the country-at-large most important is the field of agriculture. Under attainable low cost, electric power could be economically used on all farms throughout the country whose operation is otherwise justified, if only appropriate facilities and rates were provided. Such extended use would furnish the basis of transforming the entire organization and activity of the farms, and would produce essentially a new order of rural prosperity.

IN practically every direction of economic and social life, electricity is important, and promises to be the paramount utility of the future.

Fundamentally the most important characteristic of the industry is its natural or almost inevitable *monopoly* organization. While individual plants may be economically constructed for particular businesses, for the public-at-large the supplying of electricity involves monopoly. Unless power is used within a short distance of the generation, it requires transmission and distribution lines, which in turn depend upon use of public streets and highways, and so preclude for all practical purposes the duplication of competitive systems.

Two or more sets of transmission and distribution properties are physically intolerable in any community. They are a public nuisance. Even if they were physically permissible, their cost would be practically prohibitive. The required capital outlay and operating costs would be doubled or otherwise multiplied, while the volume of community service would be divided between the two or more organizations. The costs to consumers would be increased, and the scope of serviceability, limited. Monopoly is the only practical form of organization.

Desirable Size of Units

THE effective territorial scope of monopoly organization, however, depends upon the character of the territory and the specific functions included. Basic distinction may be made between generating and transmission plant, on the one hand, and distribution on the other. On account of the advantages of large central power stations, and with the increasing practicability of long distance transmission, generation and transmission may be organized economically over a large territory, and would conveniently cover state-wide areas. In some instances, they might advantageously cover interstate territories, especially where large hydro-electric projects are involved. In general, however, maximum efficiency of large scale organization would be readily attained within statewide grouping, with provisions for interchange between individual state units.

Within most states a tremendous advantage would result from complete monopoly and from a single state organization of all generating and transmission facilities. Through such a unified system, all power resources, including steam and hydro-electric plants, would be combined and coordinated in the most efficient manner. A comprehensive system of transmission lines could be provided to tie in the plants. Each of the state plants should, of course, be located in the most favorable position, and should make its contribution according to its predetermined efficiency. Through such statewide ramification, cheap power could be carried to every population area and to every hamlet and farm.

While statewide monopoly seems best suited to generation and transmission, the situation is essentially different with the service of distribution. Actual delivery of electricity to consumers may be advantageously limited to smaller territorial units. To a large extent, distribution may be left to municipalities, particularly where coherent economic areas coincide substantially with municipal boundaries. In such instances all the distribution lines, with sub-stations and other facilities, may be combined within municipal groupings. This would include all operations connected with delivery of service, maintenance of distribution properties, and the handling of customer accounts.

In many instances, municipal lines, however, are mostly heritages of past economic realities. Present real community interests transcend the restricted boundaries. Where such subdivision exists, monopoly organization of electric distribution should be based upon present economic actualities rather than historical boundaries. This applies especially to metropolitan districts where large cities are surrounded by suburban communities.

Holding Companies Run Amuck

IN no coherent economic territory would there be an advantage to any group in breaking up existing monopoly and introducing competition, except as a method of dealing effectively with bigoted private interests.

While actual organization of the industry is monopolistic, it has not followed generally the lines of maximum economy and efficiency. The same system normally includes far distant properties which are not physically connected and have practically

no advantage from far-flung organization. Where one group of properties, for example, is located in New England, another in Virginia, a third in the Pacific Northwest, a fourth in Texas, and other small units in widely separated localities, there can be no basic economy in their combined inclusion within a single organization and management. At its peak, the Insull empire served nearly 5,000 communities in 30 states, the Associated Gas and Electric served communities in 24 states while the Standard Gas and Electric extended to 20 cities.[1] Such unification requires such an extent of duplication and managerial overhead as to overbalance the advantages of monopoly. Properties included in a single management should be physically connected and continuous as to territory. They should provide for underlying economic unity rather than mere size of organization.

While existing organization is monopolistic, the process of establishing monopoly has been largely competitive. There have been numerous promoting groups which have sought the extension of their own organization or their own profits through successive purchases and consolidation of properties. In this process, they competed with each other, and consequently bid up the prices paid beyond all reasonable limits. Competition between the Associated Gas and Electric and the Power Corporation of New York before the depression forced the latter to pay for some of the properties around the St. Lawrence project, for instance, between three and eight times their value.[2]

The competitive process has largely prevented the unification of properties which belong to a single coherent system. In most states there are two or more power systems with territorial overlapping, intersections, and haphazard lines of separation. The artificial division of territory has resulted in wasteful duplication, and has prevented systematic coordination and development of power resources. It perpetuates costs and rates that are far higher than justified under present technology and attainable use of power.

With regard to distribution, the existing organization is more readily justified as far as basic costs are concerned. In most metropolitan districts the organization of the distribution system

[1] Carl D. Thompson, *Confessions of a Power Trust*, p. 232; Bonbright and Means, *The Holding Company*, Ch. V.

[2] Raushenbush and Laidler, *Power Control*, p. 52.

ignores ancient municipal boundaries and includes economic actualities. This is illustrated, for example, in Northern New Jersey, where a single power system operates through literally hundreds of individual municipalities which form a single economic territory. This wide unification carries with it certain advantages from the standpoint of basic costs and attainable efficiency, but it has also produced uncontrolled evils of monopoly. The breaking-up of such a system by individual municipal groups would be a distinct step backwards as far as basic standards are concerned. The evils of private monopoly should not be met by poorly conceived public organization.

Pyramiding Control

NOTWITHSTANDING its public character, power is organized predominantly in the form of private business. While there are numerous publicly owned and operated plants, the great bulk of the industry consists of private corporations, grouped together for the most part into extensive systems through holding company control.

Under prevailing private organization, the local properties in a community are usually directly owned and operated by a company which may own other utilities such as gas and transit systems and electrical localities in other territories. The operating company is then owned by a sectional holding company, which controls a group of operating companies and may own and operate directly some particular properties. This sectional company is then controlled by a general holding company which includes several regional units. Integrated within the series of companies, there are other concerns formed to serve particular functions for the entire system.

The more prevalent type of holding company group includes three tiers of operation and control, together with intermediate affiliated concerns. It has served to bring together into a few large systems the numerous small companies prevalent in the early development of the industry. Thus we find the Electric Bond and Share Company owning a controlling interest in the American Power and Light Company, the American Power and Light Company owning the common stocks of the Texas Power

and Light, and the latter controlling the stocks of a considerable number of Texas operating companies.[1]

The course of consolidation and unification proceeded actively after the war. In its general aspects it was based upon underlying public benefit. However, it was actuated throughout by private profits to promoters, organizers, and financiers. Not a single step was motivated by public objectives. The goal was never public advantage, with appropriate regard for promotion and conservation of public interest, but always private gains to be realized through purchase, reorganization, refinancing, and managerial manipulation.

Profiteering

EACH step usually produced distinct operating savings and added to the net earnings of the corporations. Such earnings were increased likewise by the growth of business and by technical development. These gains should normally have redounded in large part to the advantage of the public. Actually, however, the promoters and financiers capitalized all expected increases in net earnings.

Furthermore, the force for consolidation came not from expected earnings that might be gradually realized through successive steps in unification and superior management, but from speculation in the securities issued. Promoters worked intimately with financiers. Together they presented at each step the most alluring prospects for gains, supported by engineering reports, issued the maximum volume of securities that could be circulated, and unloaded upon the investing public capitalized enthusiasm. Huge profits were realized through such financial operations. Moreover, control of large systems was obtained through stock pyramiding by small groups of financiers who had little or no actual investment in the properties.

The masses of securities issued and sold to the American public in the pre-depression regime represented gross manipulation with little or no regard to the interests of the public. Since 1929 the holding company structures have been severely shaken. Some have already collapsed, notably the Insull system of the

[1] *Ibid.*, p. 58.

Middle West Public Utilities Company. Investment losses have risen into billions. For the most part, however, the far flung systems still exist, and ultimate control of the properties is exercised by small financial groups,—who resist all efforts to point the industry to reasonable public objectives.

Absentee Control

THE holding company systems have greatly accentuated the underlying contradiction between the fundamental public function of the industry and its private control. The motive force of private advantage has been aggravated by remote and isolated absentee control. Local managers who come daily in direct contact with the public are company functionaries with no power of decisions on such important problems as rates and standards of service. Ultimate control lies with a small group of bankers in New York and other centers. Here is the quintessence of absenteeism in a vital public function which daily affects practically everybody in a community.

This system creates, promotes and perpetuates conflict of interest between the public and ultimate management. While the latter controls a public function, it is distantly ensconced and has no interest in that function, seldom understands it, does not come in contact with local problems and needs, and is in every respect removed from practical realities in the many communities served. Here is why rising public criticism has been ignored, why rate reductions have not been made in line with distressful economic conditions, and why useless positions, extravagant salaries and unwarranted overheads have continued as burdens upon the public. The specific evils are briefly summarized as follows:

1. The holding company systems have failed to bring together properties and facilities which naturally constitute homogeneous and advantageous groupings from the public standpoint. They have combined discordant and distant properties, and have ignored the dictates of public advantage.

2. They have produced gross over-valuations of property included in book values upon which securities have been issued. The Power Authority of New York, in its report of 1935 on the electrical companies of the Consolidated System serving New York, estimated that, while the book value of these companies

at the end of 1932 was placed at $748,500,000, the value of the properties after water had been squeezed out was $469,000,000, a difference of nearly $280,000,000.[1] The extravagant financial structures, with the fixed charges involved, increase the difficulty of adjusting rates and other important matters to changing conditions and public needs.

3. Holding companies have furnished to the operating companies elaborate services which are, for the most part, of little real value. The charges made by them for needed services have generally been far greater than the value of these services. Testimony was offered before the Federal Trade Commission, for instance, to the effect that the American Gas and Electric Company made a profit on the engineering and supervision services rendered to their subsidiaries in 1927 of 71.6 per cent, "which means that of every dollar received from engineering and supervision fees there was about 71 cents profit." In 1928, it was testified that the profit was still larger, about 2-4/5 times the cost of rendering the service.[2] The charges of the holding companies often go to pay for high salaries and extravagant overhead generally.

In the federal trial against Samuel Insull, the latter admitted that he had received the following salaries in 1929, 1930 and 1931:

Commonwealth Edison Co. and subsidiary.....	$150,000
People's Gas, Light and Coke Co., and subsidiary....	100.000
Public Service of Northern Illinois and subsidiary..	86,000
Middle West Utilities Co.....	50,000
Midland Utility Co. and subsidiary.....	41.000
Chicago Rapid Transit Co.....	25,000
Chicago, North Shore and Milwaukee R.R.....	12.000
Chicago, Aurora and Elgin R.R. (1931).....	49,000
Peabody Coal Co. (1931).....	48,000

"I received these salaries," he replied. "And I think that ordinarily the laborer is worthy of his hire." During 1931, Mr. Insull also received the small pin money of $200,000 dividends

[1] See introduction to this report, p. 19; see also Thompson, *op. cit.*, Ch. XV.

[2] Thompson, *op. cit.*, p. 191.

and over $200,000 profits on the sale of his stocks. This made a total in that year of around a million dollars.[1]

The salary and bonus of S. Z. Mitchell, Chairman and Director of the Electric Bond and Share Company Group, in 1930 totaled $276,560; of E. C. Groesback, Director and President, $251,260; of H. C. Abell, Vice-President and Director, $115,120; of Frederick A. Farrar, Director, $110,340; of George M. Tidd, Director, $183,170, and of F. C. Odlum, Director, $125,120.[2]

4. Holding companies have created the extreme of centralized control combined with absentee management. This promotes conflict between private objectives and public needs. It concentrates interest in the stock market and financial activities rather than in progressive economy and efficiency and in service operation. An investigator for the Senate Committee testified that the Insull Utility Investments, Inc., stock had a market value seven months after the corporation was formed of $302,000,000, seven and a half times the invested capital. To have earned 6 per cent that year (1929) on that value would have required a profit of $18,000,000. As a matter of fact the net profit for the year was less than $2,000,000.[3]

5. Holding companies have eliminated direct responsibility. While there are elaborate though largely useless provisions for regulation in most of the states, these provisions are directed to local operating companies, and do not reach the final small group which constitutes the real management.

6. The cumulative result of the pyramiding of control is glaring disregard of public interest and aggrandizement of private advantage. The ignoring of public interest applies not only to consumers and to the vast economic and social structure which depends upon adequate and cheap power, but also to investors themselves—the people who actually furnished the capital for the development of the industry. The losses sustained through disregard of public interest and the misery caused among people who had taken the advice of assumed financial and industrial leaders stagger the imagination.

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[1] Harold O. Hatcher, *Within the Law*, p. 25.

[2] *New York Times*, Feb. 27, 1934, p. 10.

[3] John T. Flynn, *Security Speculation*, p. 159.

THE country is face to face with the glaring contradiction between public interest and private control. The grave problem is how to harmonize organization and management with public needs—how to keep them systematically directed to public purposes.

Every intelligent person realizes that the organization and system of control are wrong; and the masses of people feel the result of mal-organization through high charges. Specifically what should be done is less clear to the great majority of public-minded individuals.

That the basic industry can be permanently continued under private organization without effective public control is inconceivable. The fundamental question is whether regulation or public ownership provides the way out.

II. BREAKDOWN OF REGULATION

IN considering the problem of regulation, we must not lose sight of the fact that the present evils in the electric industry came into existence while the system of state control was supposed to furnish public protection.

The prevailing system of state regulation which applies to electric power as well as other utilities was instituted about a quarter of a century ago. It was intended particularly to prevent the recurrence of such financial manipulation and exploitation as had developed during the previous generation in railroads and street railways. Its object was to keep the utilities directed to public advantages and objectives.

When the commission system was adopted, the electric industry was practically in its infancy. The strides in technology and its application have mostly been made since that time. And the far flung empires of holding company systems have been created with all their public abuses and losses to investors, while the commissions stood by helpless. At times they seemed indeed to be totally unconscious of what was happening. Now that the history of the earlier railway finance and management has repeated itself, what chances are there for revising the system of control to prevent such future evils?

The present regulatory system consists mostly of a state commission created by special legislation and charged with the responsibility of fixing reasonable rates and exercising such other control as specifically provided for by statute. The commissions have been concerned primarily with the fixing of rates, but they have had control also of quality and standards of service, accounting, the issuance of securities, and other matters involved in the public interest. An analytical summary will be briefly presented under the following headings:

1. Breakdown of Rate Control
2. Lack of Administrative Yardsticks
3. Conflict between Public and Private Interest
4. Inadequate Public Representation
5. Ascendency of Judicial Role
6. Lack of Managerial Control
7. Politics and Company Domination
8. Revising Regulation Machinery

1. *Breakdown of Rate Control*

THE commissions, as has been said, have been entrusted particularly with the duty of fixing reasonable rates. Actually, however, they have failed signally to furnish effective rate protection to the public. While they have been extensively concerned with rate cases, they have lost themselves in procedure, and have not succeeded either in reducing or raising rates in any scientific fashion.

The failure of commissions to perform their primary function of rate control has been strikingly illustrated during the years of the depression. In 1929, for example, electric rates were, in general, excessive throughout the country, especially for residential, commercial and municipal users,—the groups in which monopoly has been practically complete. During the preceding decade, it is true, some downward rate modifications had taken place. However, for the most part, the rapid advancement in the industry, the increase in volume of business, the improvement in load conditions and the consequent reduction in basic cost of service, had, during that period, been absorbed by net earnings and expanding overheads. While there had been mounting criticism against

excessive rates, no substantial reductions had been made up to the financial collapse in 1920.

In the economic depression since 1929, prices have fallen greatly, business has collapsed and unemployment figures have shot upward. On the average the mass of the people have lost about 50 per cent of their total purchasing power. These conditions continue. Yet the power companies have practically stood pat. With some exceptions, they have held to pre-depression rates. They have been able to do so because of their monopoly positions, the importance of the electrical service under modern conditions, and the woeful impotence of the regulatory machinery.

The commissions have been presented with an increasing number of complaints. They have conducted rate hearings, but have made but few reductions. With their administrative incapacity they have turned to what was deemed a new deal of "negotiation" with the companies, but these have been found unwilling to yield any ground. While the facts have been clear to those who understand basic costs of production and distribution, the public representatives have been helpless to bring relief to distressed consumers.

2. *Lack of Administrative Yardsticks*

THE basic difficulty has been the lack of exact standard or yardsticks by which rates could by systematically adjusted in fairness both to companies and consumers. Under the law of the land, commissions have been told that the rates should be based on "fair value." But just what fair value is has never been established. It has been the subject of controversy since the beginning of the country, and is today as unclear and unsatisfactory for purposes of rate control as it was in 1898 when it was first enunciated by the Supreme Court of the United States in the famous case of *Smyth vs. Ames.*

Fair value for rate making appears to be determined primarily by the estimated reproduction cost of the properties used in the public service, less depreciation, plus allowance for working capital and unclear provision for so-called "going concern." While other factors are properly considered, they have been given essentially a subordinate place in the valuation set-up. Under established procedure, fair value is reached through physical appraisal

of the properties. While this has not been absolutely established, it has been deeply embodied in court opinions and in regular practice.

Here, then, is the prime difficulty in fixing reasonable rates. Whenever prices and costs or other conditions have changed materially, a new physical valuation is necessary for legal rate adjustment. With changing conditions, the amount of fair value is not a definite fact that can be continuously and definitely maintained as a regular part of administration. Consequently, whenever rate revision is undertaken, an appraisal is necessary, and this blocks official action for a long time and immediately creates conflict of interest between the company and the public.

Practically every step involves opinion and judgment on the part of the appraiser. This includes even the apparently simple matter of preparing the inventory, i. e. making a mere physical count of the number of units in each class of property. There may be difference of opinion, first, as to whether particular units are really used and useful. Second, there is doubt as to the amount of different kinds of labor and material embodied in the units as used. For example, in the inventory of a power plant building, while the structure itself is a definite unit, its make-up as to elements is largely a matter of estimate—estimate as to the amount of excavation, filling and concrete required in the construction of the plant, the necessary combination of labor and materials needed, etc.

Following the inventory the appraisal requires that appropriate prices for each class of units included in the inventory be duly determined. Each estimate of price is a matter of opinion, not a definite fact exactly ascertained. Then there are allowances for various supervisory and construction overheads; all determined by judgment and not exact figures.

After the reproduction cost new has been calculated, the next step is the question of deduction for depreciation. This should take into account the physical wear and deterioration of the various units, together with their loss of usefulness or function due to the progress made in the industry and to changing service requirements. None of the elements of depreciation can be determined by reference to exact facts. Every one depends upon technical considerations concerning which there may be wide differences of opinion.

Finally the question arises as to what allowances should be made for working capital and particularly for "going concern." Both are matters of estimate, but "going concern" is especially a quantity confused both as to concept and content. A company usually claims that there must be a separate and additional allowance of value for the fact that it has an established clientele and an operating organization. But this fact is embodied in every prior step in the appraisal. Except for an established business and operating organization, the properties would be intrinsically worthless, for they would not be able to obtain a return upon the computed reproduction cost valuation. Why an additional "going concern" value? If allowed, upon what basis of facts? The entire matter is one of assumption and not of exact determination.

3. *Conflict Between Public and Private Interest*

THIS brief survey of appraisal procedure shows clearly that practically every step creates conflict between public and private interests. The various factors are presented by experts who have had special training and experience, so that their judgment is supposed to bear weight. Unfortunately, however, they are human and are naturally influenced by the interest of their employers. The company experts veer to high valuations, and those on the public side to low ones. Inasmuch as practically every step depends upon opinion, personal bias almost inevitably leans toward the special interest by which the expert is engaged.

Valuation cases not only create continuous conflicts of interest, but they result also in prolonged, cumbersome and costly procedure. When, for example, the case involves reduction in rates the company seeks not only maximum valuation but also maximum delay. It presents elaborate and minute valuation data. On cross-examination of public witnesses it brings in irrelevant and immaterial data. Conversely, when rate increases are involved, public representatives are similarly interested in prolonging the proceedings.

When hearings in a case are finally closed, the commission is confronted with a mass of exhibits and technical testimony and with reams of trivialities. They are also usually without clear facts upon which to base exact determination. The decision is to a large extent bound to be arbitrary. If the regulating body

orders a rate reduction, the company will find numerous items on which to base an appeal to the courts. A court appeal necessitates a resurvey of the materials, and a new technical record, with all the steps of proof, examination, cross-examination, etc., that had already been so laborously traversed. Following the new court decision, there may be succession of appeals, ending with the Supreme Court of the United States. This final body, however, may send the matter back to the commission for redetermination. No result is ever final. By the time the ultimate decision has been reached, conditions may have changed to such an extent that the original commission order is no longer applicable. Then a new case starts over again, unless, as is often the case, the whole policy of rate control goes by default because of administrative break-down.

The whole course of rate procedure is admirably illustrated by the famous or notorious New York telephone case which recently came to an end in the Supreme Court after continuous litigation since 1922. Almost on the date of the decision, a new action was started, with all the old time difficulties in the way of obtaining reasonable rates.

4. *Inadequate Public Representation*

WHILE theoretically the system leads to difficulties for both sides, actually these travesties of procedure are limited mostly to the companies. In the ordinary rate case the company is represented by skilled and experienced counsel who has a retinue of engineers, accountants and special valuation experts trained to elaborate, befog, and impose upon the commission the carefully developed scheme of claims. The witnesses have had long experience in testifying and in meeting points on cross-examination. The company, moreover, does not spare costs in preparing and presenting the case, for it includes these costs in operating expenses paid by the public in the rates charged for service. The New York Telephone Company, it was testified, spent about $6,000,000 on a rate case which lasted nearly 10 years, and this expense was charged to its customers. Similarly the New York Edison case, involving the electric rates in New York City, continued for about 7 years at a cost to electric customers of perhaps $5,000,000, and was never concluded.

On the public side the situation is very different. First of all, the public counsel is usually inexperienced in rate cases. Next, he is severely limited in funds available for the preparation of the case. Consequently he cannot get competent or sufficient experts to collect, analyze, and present the facts properly from the public standpoint. To a large extent he proceeds with futile examinations and clutters up the record with harangues and immaterialities rather than evidence. Only in rare instances has the public side been in any sense competently and adequately represented. Where substantial sums have been spent, they have usually been to a considerable extent wasted for lack of a clear understanding of what is involved and needed.

The sad commentary is that the public pays lavishly for skillful and over-complete presentation of the company's side, and then scimps and fails to present competently and adequately its own side. Rate cases can be handled for the public with much more competence and effectiveness, and with economy, if there is clear understanding of what is involved, and if there is definite planning. The cost of efficient preparation is not prohibitive under sensible arrangements.

5. *Ascendancy of Judicial Role*

ANOTHER aspect of regulatory travesty is the conversion of the commission from a body representative of the public to a court which receives evidence and makes its decision as between the company and the public upon the judicial record in the case. The commission itself was originally intended to represent the public; it was never expected to be a court. Its direct representative function, however, has long been sloughed off. Practically every commission today regards itself primarily as a judicial body and proceeds accordingly. The responsibility of representing the public has devolved either upon municipal officials or upon consumer or other public groups. The alternative representatives are hardly ever able to represent the consumers adequately on account of lack of experience and funds. Furthermore, the public-at-large mistakingly assumes that the commission looks after consumers, not realizing the subtle transformation that has taken place.

The plain fact is that the public side in rate cases has gone

largely by default. There are, of course, instances where the commission on its own account does make investigations from the public standpoint. For the most part, however, these studies are limited and are largely frustrated because of the conflicting function of judicial decision; there is more pretense than actual representation. No official body can sit as a court to decide between two sides, and at the same time serve effectively as the legal representative of one of the parties. Here are basically conflicting duties which cannot be satisfactorily carried out simultaneously as a regular matter of policy. The successful instances are exceptions which do not vitiate the age-proven principle.

Further, with the passage of years, new duties have been steadily imposed upon the commissions by the legislatures without corresponding financial provisions to defray the cost of the work. During the depression, the government economy wave has engulfed the commissions at a time when prompt rate adjustments were particularly necessary. Practically no commission has been in position to do the necessary work even if it had not assumed the judicial role and had not virtually renounced its direct public responsibility. There is an old saying that bricks can't be made without straw. That applies to the work of public control as well as to physical construction.

6. *Lack of Managerial Control*

REGULATORY commissions have also lacked suitable control over basic organization and operation.

The scope of regulation has been largely limited to rates, standards of service, accounting, reports, records, and security issues, and is prescribed by statute. No commission can do what has not been delegated to it by the legislature. But there is no specific limitation upon the power of legislation as to what may be included under public control if warranted by public needs and welfare.

Under the existing statutes, the commissions have no direct power over salaries and wages paid, over the number of positions needed for efficient management, over prices paid for materials and properties purchased, or over contracts involved in the construction, maintenance and operation of the properties. All these have been regarded as matters of *management* and have not been

placed under direct commission control,—but the reasonableness of costs incurred may be considered in the fixing of rates.

During recent years in some instances regulation has been haltingly extended over such managerial activities. New restrictions have been directed especially to contracts and dealings between affiliated companies. For the most part, however, they applied only to publicity and to the determination of reasonable cost.

Even if there were definite standards and systematic administrative provisions for rate making, the effectiveness of public control would be greatly reduced by lack of public direction in management. Every vital step in consolidation, organization, financing and management should be determined on the basis of public requirements rather than private advantage. Every important contract or decision that involves cost and efficiency should be subject to public criteria, not solely to what will yield the most profit.

While the routine of construction, maintenance and operation must necessarily be carried on through regular managerial agencies, the controlling directive force should follow public patterns rather than aim at private gain. Regulation has left the companies free in the first instance to do as they pleased, and then has attempted to interpose public standards with respect to rates and other more or less important matters. The regulatory process should point continuously to public objectives and should never permit the underlying material distortions which complicate and largely frustrate the efforts of regulation.

7. *Politics and Company Domination*

A STILL further defect in the system has been the selection of commissioners and the appointment of personnel to do the work of public control. Commissioners charged with vast public responsibilities are selected normally through regular political channels. Only in rare instances has an individual been appointed because of his technical qualifications and public perspective. When a person has at times emerged after several years of experience and education at public expense to a point of reasonable qualifications, he has usually been removed through shift in political affairs. There has been lack of continuity in office for efficient

individuals as well as lack of regard for qualifications at the time of appointment.

Commissioners appointed without grasp of their public function naturally have no high standards for appointment of engineers, accountants, lawyers and others charged with the duty of day-by-day regulation. Political factors have entered more or less into all appointments, and lack of public perspective has characterized most commission personnel. There is seldom any clear realization of what is needed nor is there a positive effort to obtain public results.

Coupled with political spoliation, have been the company influences upon appointments. The selection of "safe" commissioners is naturally important to the companies. Consequently they exercise close scrutiny over individuals under consideration and "cooperate" to assure "proper" appointments. Their influence extends not only to the appointing of officials, but ramifies through the political organizations which largely dictate the selection. This applies not only to commissioners, but to key positions in the administrative organization and as far as influence can be practically carried. It reaches all major political parties and pervades all major organization. In many cases, after a commissioner is appointed, he is given to understand that, if he does the "right thing," he may expect a good berth in the electrical industry after his term of service is over.[1]

This sinister force naturally goes as far as it can be practically carried by managements which do not come under direct purview of public control. It reaches, as glaringly established by the Federal Trade Commission, not only quasi-public organizations, civic groups, and social clubs, but also public schools, colleges, universities, and particularly the press. It has furnished inglorious instances of university professors, economists as well as engineers, who have been paid by state universities maintained at large public cost for public welfare, but who have devoted their major energies in sustaining invalid positions for the companies in rate cases and other matters involving public interest.

Here is an utterly vicious force that is continually directed upon regulation. Even if technical standards and machinery were reasonably devised, the results would still be affected by constant

[1] For a partial list of commissioners who later secured highly paid positions with utilities see Keezer and May, *The Public Control of Business*, p. 245 *et seq.*

political insinuation. This is the final reason why regulation is ineffective, why suitable standards and machinery have not been introduced, and why successful leadership has not appeared in dealing with regulation.

Notwithstanding their widespread influence over politics, press, business, church and education, the companies have not succeeded in holding back public discontent and preventing criticism of unsavory conditions. The pernicious activities of the industry are generally understood. That regulation has been largely futile, has come to be widely recognized. What the basic defects are, however, is not nearly so clear to most intelligent and public minded people. Here is need for blunt presentation of facts, and for consideration of public needs in relation to suitable organization, management and public control.

8. *Revising Regulation Machinery*

IF regulation is to be made reasonably effective as an instrument of public policy, it must be basically revised. First of all, it must be based upon exact standards and administrative machinery. It must be continuous, operative every day. Indefinite and spasmodic action is bound to be futile. There must be precise establishment of relative rights between the companies and the consumers, and exact facts for systematic adjustment of charges to the public.

Regulation must be pointed clearly and constantly to public objectives. It must include not only rates but organization, unification, capital structures and management. It must reach salaries, wages, prices and every important action that affects efficiency and public advantage.

If regulation is to be reasonably satisfactory, it must particularly eliminate conflict between private and public interest. It can be freed of the bulk of present conflicting elements. It can be made much more effective, as illustrated by notable instances of striking success attained through definite standards and systematic administration, directed by individuals who had clear public perspective and zeal.

The most noted instance of successful reconstruction of regulation is that of the so-called Washington plan which late in 1934 received extensive public discussion. At the beginning of

1925, following special Congressional action after long disputes over valuation and rates, the District of Columbia Commission entered into an agreement with the Potomac Electric Power Company for subsequent rate adjustments according to regular administrative standards. While the new plan did not eliminate all conflicts of interest, and did not prevent later litigation, it nevertheless provided substantially an exact procedure and has been amazingly successful as compared with prevailing regulation elsewhere.

The plan provides for a basic valuation which has been agreed upon and which is adjusted from year to year according to new property additions, retirements, and developing depreciation. The rate base is thus regularly fixed by accounting procedure, without recurrence of physical appraisal. The company is entitled to a definite base rate of return upon the valuation, with the continuous incentive to progress and efficiency by dividing the returns realized above the base rate between the company and consumers. Successive rate reductions are exactly determined as a matter of regular administration.

The new plan went into effect in 1925. In 1924 the residential rate was 10c per kilowatt hour, and the average domestic consumption was 24 kwh per month. During the 10 years, five of which were depression, the rates have been gradually reduced to a present maximum of 3.9c per kwh, and the residential schedule is among the lowest in the large American cities. Average consumption has increased to 75 kwh. This great expansion in use has furnished much broader basis of earnings for the company, and has added to its permanent financial stability.

The plan has worked successfully both for consumers and investors. This is the result of exact administration, with due regard to incentives for efficiency on the part of management. It points clearly the way for general reconstruction of regulation.

Extensive efforts will doubtless be made, and should be duly exerted, to reconstruct the standards, machinery and objective of public control. *There is grave doubt, however, as to success because of continuous and vigorous opposition.* Naturally the companies do not want effective regulation. They opposed the present system when it was inaugurated, but have long since succeeded in making it innocuous or protective to themselves rather than to consumers and the public-at-large. They will un-

questionably resist any vital revision which threatens to interfere with their entrenched and protected position.

If any promiseful revision is made, the companies will promptly proceed to undermine it, to render it nugatory and to convert it into a protective device for themselves. This appears quite inevitable in the situation of huge capital investment in public function. There is grave doubt whether the industry as a whole can be left under private organization and management and then subjected successfully to standards of public control, continuously directed to public objectives, without subversive interference by the companies. The alternative of direct public ownership and operation furnishes the more hopeful organization. This will be considered in the next section.[1]

III. PUBLIC OWNERSHIP

AS a long run policy, a vital public function is best organized, managed and controlled publicly, especially if it is intrinsically monopolistic in character. If it is not so owned, it probably cannot be successfully controlled in the face of conflicting interests. The private advantages from evasion almost inevitably undermine the public standards of control.

To deal effectively with the electric industry clearly seems to require the replacement of the present private systems with public organization. To bring about this shift, however, is a huge undertaking which is beset by life-size obstacles. The industry is deeply rooted with private ramifications. It has franchise rights, fixed investments, and securities which are held as investments by various kinds of funds and institutions. It has tremendous political connections, and has particularly powerful legal defences.

[1] As this manuscript is being completed, a comprehensive bill for the regulation of holding companies has been introduced in Congress for the purpose of preventing the recurrence of such financial and managerial abuses as prevailed during the pre-1929 regime. Its object is to place future security issuance and managerial activities under federal control, to eliminate uneconomical holding company units, and to bring about coherent systems which have real public advantage in their organization. The utility interests are solidly opposed to the bill, and have organized countrywide barrage against its enactment. Their attitude illustrates admirably what may be expected in any effort to bring about effective regulation from the public standpoint. The ultimate efficacy of the bill may be doubted, for it does not reach the physical properties, operating costs, valuations, and rates. Effective regulations is primarily a state matter, and requires much more positive provisions. Yet the companies are spending millions of dollars to defeat the bill. This is dramatically indicative of what they would do if real measures were taken to make regulation a workable instrument of public control.

MORE important, perhaps, is the state of public opinion. While there has been rapidly rising criticism of power companies, there is nevertheless wide and deep distrust of public ownership and operation. This follows, in part at least, the defects in governmental and political structure. That government has not been highly efficient and that democracy as organized has grave faults, there can be no doubt. A real new deal requires basic political and governmental as well as economic reconstruction.

Furthermore, there is widely prevalent feeling of a "natural" line of demarcation between business and government. The popular mind is opposed, as a matter of "principle," to government in business. While its conception is unclear, it feels nevertheless that government should be kept within its own fundamental functions, and business should be left to private organization.

Those who have a clear understanding of business as well as government, realize that the popular conception of relative governmental inefficiency is grossly exaggerated and that there is no "natural" separation between government and business. While, of course, important changes in structure are sorely needed, actually governmental efficiency has probably been greater than private. As will appear later, public ownership of electric plants has been highly successful compared with company operation.

The fact, however, is that the companies are deeply entrenched, and there is inadequate public opinion to support positive and vigorous public ownership measures. For this reason desirable policy will require consideration of regulation as well as public ownership. Furthermore, discussion of regulation, administrative standards, and difficulties encountered in regulatory revision, and the dreary efforts to obtain needed rate readjustments will all contribute to popular education and to realization of basic public requirements. Struggle for effective public control is really an essential step toward the establishment of public ownership.

To institute public ownership on a comprehensive scale requires a clear understanding of the industry in its relation to public needs, and calls for a program based upon the character of the properties and upon public advantage. The remaining

pages will be devoted to the specific advantages of public ownership, a summary account of the successful systems, and the basic requisites of satisfactory public organization.

Elimination of Conflict

THE chief advantage of public ownership is the elimination of conflict. Many billions of dollars of new investment will be needed for future electric extensions and improvements, whether the industry is organized privately or publicly. If publicly, it will avoid outright all conflict with private interests continuously connected with the industry. While there may be graft in contracts, purchases and otherwise, all such private gains will be misdemeanors, subject to legal penalties. In the regular conduct of the business there will be no permanent private rights; there will be only transient ones, the payment of salaries, wages, materials, etc. The eradication of conflict is the primary advantage of public organization.

Direct Public Objectives

THE second is the direct establishment of public objectives. The entire organization is conceived from the standpoint of public purpose. All extensions, improvements, consolidations and acts of management have their origin in community needs and benefits. All motivation is public, and it is not diverted by continuous impact of private ends. It is not perverted by lure of profit on purchases, sales, mergers, reorganizations, financing, and other activities and arrangements which have produced the grotesque system and management which now encompass the industry.

Removal of Politics

THIRD, there is the elimination of insidious private interests from politics and related affairs. There will be no "public relations" executives with the function of "paling" with politicians, influencing legislators, seeking privileges, shunting responsibilities, and attaining "safe" appointments to commissions and other official positions which may be useful to the companies.

While, of course, there will be large numbers who will come directly under public employment, with grave potential dangers, actually such political evils have not proved to be terribly serious and they can be limited through civil service and personnel policies. They have been much less corruptive than the company activities, which include control of employes in company politics. If operation were to be dominated by political appointments for political ends, the public advantages would be dubious. Actually, however, no grave evils have arisen in the many public plants, and suitable safeguards can be created to keep management and control in the hands of people who are efficient and who have clear perspective of their public responsibilities.

Definiteness of Finance

FOURTH, there is definiteness of financial policy and results. This applies both to capital outlay and operating costs. The entire capital set-up is exact. Capital funds are provided through bonds or earnings; the charges to property accounts are limited to actual cost; the returns required are fixed by the bond issues or other obligations, including not only interest but also provision for amortization or retirement of bonds. There is no perpetuated rate base; no inflation through valuation or other procedure. If there is occasional "graft" it pales before the immense inflations that have characterized so many private systems.

Operating costs likewise are kept to actual payments of salaries, wages, materials and necessary services. The scale of executive salaries is always low, and the number of positions is well limited to service needs. There is no grandioseness of positions, magnified by super-pay and imposing array of functionless officials. No monumental structures, no elaborateness of office regalia, no luxurious overheads to match the artificial dignity of the hierarchy of officials without real work to do for the public.

With regard to ordinary labor and technical employes, public management apparently has not proved itself superior. On the average perhaps, higher private standards of efficiency have been maintained in ordinary processes of operation and maintenance. This, however, has been far counterbalanced by overheads and managerial extravagance. These charges, together with payments to affiliated companies for "services," draining off profits under

guise of capital and operating charges, and excessive returns upon manipulated valuations, have placed upon consumers total over-all costs which have far exceeded those of publicly owned plants.

Incentives to Efficiency

THE fundamental basis of progressive efficiency is lacking in privately organized labor. Grave doubt has been created among many competent students of economic organization as to basic efficiency of private industry in general. For the most part, however, where business is competitive, there are positive forces that work for increasing efficiency, though these very forces doubtless have contributed to industrial instability and disintegration. Competition is likewise exceedingly wasteful, particularly in the merchandizing ends.

The power industry, however, is different. It is concerned with basic necessities supplied under monopoly conditions, subject to public limitations upon profits realized. Consequently it lacks the ordinary incentives of private competitive business, particularly when its gross earnings under prevailing rates have been materially greater than basic costs necessarily incurred, as has been true continuously since the war. Under these circumstances it has not been spurred to efficiency and low costs. On the contrary, it has been induced to absorb gains due to technological progress and improved load conditions, by extending overheads, spreading extravagance, and disguising profits.

A vital industry organized privately on a monopoly basis must inevitably be subjected to public limitations upon charges and profits. Such restrictions, however, immediately destroy the ordinary incentives for progress. For an essential public function there must also be public appeal for advancing performance. Its entire organization and management must be predicated primarily upon service standards rather than private profit. Its basic motivation must be different from ordinary business.

Doubt may be raised as to the efficacy of service standards as a substitute for profit motive in stimulating progress. Experience, however, in many fields of public organization demonstrates that public ideals and standards can be created as an effective substitute for profit, provided that there is suitable organization.

This requires in particular professional criteria for managerial selections.

Highest technical ability can be obtained at moderate compensation for public purposes, if public objectives are clear and if competence is not strangled by political or other interference. *Publicly owned power plants have maintained managerial efficiency that compares favorably with the best private organizations, at salaries far below private levels.* The very feeling of responsibility, if not stifled by politics, makes tremendous appeal to real competence. No $150,000 president with elaborate front and hierarchy of vice-presidents, assistant vice-presidents, et al., all buttressed with pretentiousness, is necessary. Such managerial extravagances are restrictions and not inducements to real progress.

Municipal Plants Successful

UNFORTUNATELY, no exact comparison of efficiency between private and public plants can be made. Any measurement can be subjected to doubt. Openminded study of actual accomplishments, however, shows that, on the whole, public plants have done a better job, at much less total cost to consumers, with clearer realization of public objectives, and with much less political and other vicious affiliations which have characterized the private systems.

Wide comparison of basic costs to consumers must, first of all, take into account the fact that public plants prevail mostly in small communities, where conditions are less favorable to low costs. Metropolitan and city systems are mostly private. This difference affects not only basic costs of generation and transmission, but particularly distribution. In smaller communities there is greater spread of population, lower density of consumers to distribution facilities, smaller average consumption, and consequently higher unit cost of service.

According to the latest census figures, in 1932 there were 1,802 public and 1,627 private power systems. Municipal plants are limited mostly to single municipalities or immediately adjacent territory, while the private systems include numerous municipalities and extensive distribution territories. Consequently, while the municipal plants constitute 52.9% of the total number of plants, the private plants have 94.1% of the business.

The best comparison is obtained if the small municipal plants are disregarded and only the larger ones are considered. For this purpose all municipal plants which furnish regular commercial service in cities of 50,000 population and over may be compared with more or less corresponding private plants. Based on latest information obtained from such public plants, the following table furnishes the bills and charges per kilowatt hour for the ordinary residential user of 40 kilowatt hours per month, for a moderate user of 100 kilowatt hours, and a large user of 250 kilowatt hours per month:

MUNICIPAL PLANTS

	40 *kwh*		100 *kwh*		250 *kwh*	
	Total Amount	*Per kwh*	*Total Amount*	*Per kwh*	*Total Amount*	*Per kwh*
Glendale, Calif.	$1.81	4.50c	$3.31	3.31c	$6.69	2.68c
Hamilton, Ohio	1.90	4.75	3.85	3.85	7.35	2.95
Holyoke, Mass.	1.60	4.00	4.00	4.00	9.25	3.70
Jacksonville, Fla.	2.70	6.75	4.95	4.95	7.50	3.00
Kansas City, Kan.	1.80	4.50	2.70	2.70	4.95	1.98
Lansing, Mich.	1.85	4.62	3.25	3.25	6.00	2.40
Los Angeles, Calif.	1.81	4.50	3.31	3.31	6.69	2.68
Pasadena, Calif.	1.80	4.50	3.50	3.50	6.50	2.60
Seattle, Wash.	2.20	5.50	3.40	3.40	6.30	2.52
Springfield, Ill.	1.90	4.75	3.90	3.90	6.15	2.46
Tacoma, Wash.	1.80	4.50	2.40	2.40	3.90	1.56

For the eleven municipal plants, the simple average for 40 kilowatt hours is 4.8c per kilowatt hour. For the next group the average is 3.5c, and for the last, 2.6c. These charges are materially lower than prevail generally in cities of 50,000 population and over. This is shown by the Federal Power Commission's recent survey and report on residential electric rates which for all cities of 50,000 population and over gives an average of about 6c per kwh for the first group, 4.5c for the second, and 3.5c for the third. If we pool all cities under public ownership and all under private, we will find that, in 1932, private plants charged 23 per cent more for domestic service than did public plants; 65 per cent more for commercial service, and about 100 per cent more for street lighting. Only in the case of the sale of power at wholesale for industrial purposes was there a slight difference in favor of private plants.

Besides relatively low rates to consumers, public plants have provided also other important advantages. Investment has been amortized through bond retirements or otherwise. Substantial profits have gone either into plant development or for other municipal purposes. Low charges have been made for street lighting and other municipal use. The following shows net assets compared with bonded indebtedness and public equity in the plants:

	Net Assets (a)	*Bonded Debt*	*City's Equity*
Glendale	$ 1,642,173	$ 66,500	$ 1,575,673
Hamilton	2,571,378	145,170	2,426,208
Holyoke	2,051,205	708,293	1,342,912
Jacksonville	9,440,893	1,387,500	8,053,393
Kansas City	5,584,081	2,344,000	3,240,081
Lansing	7,639,792	2,741,000	4,898,792
Los Angeles	75,520,368	35,216,000	40,304,368
Pasadena	6,781.049	327,342	6,453,707
Seattle	44,700,550	31,002.000	13,698,550
Springfield	3,646,263	265,000	3,381,263
Tacoma	19,718,077	7,959,000	11,759,077

(a) Total assets less current liabilities and depreciation reserve.

In a study of 18 municipal electric light plants in the smaller cities of California, it was found that these plants had been paying off bonded indebtedness from earnings until the total of outstanding bonds was only 15 per cent of the value of the plants.[1]

Municipal Advantages

THERE has been considerable divergence in rate policy. In the case of Jacksonville, for example, rates have been kept near the level with those of private companies in nearby cities. While they have been rather high, in 1933 the plant showed a net profit of $1,550,000 above all operation costs and fixed charges, and made a large contribution to general municipal expenses. Its policy is high electric rates combined with low taxes. This is a matter of local determination by the municipality, but the basic fact of efficiency and total public advantage is not changed. Every one of the eleven systems has been a striking success compared with similar cities served by private companies.

[1] F. L. Bird and F. M. Ryan, *Public Ownership on Trial*, p. 86.

Great ado is made by the companies over taxes paid and the effect upon rates. It is, of course, true that taxes have been increased steadily and that they constitute a substantial percentage of the total operating costs. Naturally they must be borne by the rates charged to consumers. There is grave doubt as to long-run desirability of placing high taxes upon the industry, directly or indirectly, rather than lowering rates to make consumption as widely available as possible for various purposes.

No exact comparisons can be made regarding the tax factor. It has, however, been exaggerated as a cost element in rates. If the total taxes paid by the companies are properly allocated between the different services, their effect would not be more than a fractional cent per kilowatt hour for residential service. If this were deducted entirely from the prevailing residential rates, the comparison would still be in favor of the municipal plants.

Against taxes paid by the companies, consideration must be given to the much lower charges by public plants for street lighting and other municipal use. While these elements cannot be exactly presented, some indication can be given as to their magnitude. In Pasadena the street lighting rate during the depression has been reduced from 2.5c to 1c per kilowatt hour. The same rate of 1c applies to Seattle. In Tacoma and Springfield the average is 1.5c. These rates contrast strikingly with the prevailing bills in cities served by private companies. The conclusion seems clear that the contributions by the municipal plants to the general expenses of the cities, to street lighting and to other municipal departments, more than counterbalance the taxes paid by private companies for governmental purposes.[1]

Public Ownership Program

THAT efficient and responsible public organization is available, there can be no doubt. That there will be substantial extension in the number of public plants in the more or less immediate future seems highly probable. Consideration should therefore be given to comprehensive establishment of publicly owned and

[1] The data for the eleven municipal plants are taken from an article by Frederick L. Bird on "How Municipal Lighting Plants Survive Hard Times," *National Municipal Review*, November 1934; they were originally assembled by the author for use in that number of the Review of which he was special editor . See also Bird's *Public Ownership on Trial* (New Republic) and *The Management of Small Municipal Lighting Plants* (Municipal Administration Service).

operated systems. Piece-meal and spasmodic extensions may prove educational, but will not advance the public interest materially; they may cause a comeback against the movement. The concluding pages will be devoted to the fundamental requisites of comprehensive extension and organization.

In instituting public ownership in any thoroughgoing fashion, the first essential is to remove prevailing legal obstructions. In most states there are constitutional or other legal obstacles in the way of public ownership. Municipalities may not have the bare right to establish and operate their own electric plants. If they do have the formal right, they may be restricted through debt limits, existing franchise grants, or other limitations. All unjustified restrictions should be stripped off and each unit of government should be free to decide for itself what to do.

The legal situation depends upon the particular state, and the state itself may be subject to constitutional restraints. Careful consideration is necessary in each state to determine exactly what the law is and what specific changes are needed to enable both the state and its political sub-divisions to proceed with unhampered establishment of public ownership. This should include provisions for special district organization or extension of municipal service to adjacent territories. There should be no arbitrary restriction of debt limit or other fixed financial policy, except basic soundness of financial organization and management.

Existing Properties

NEXT after legal provisions, the establishment of public ownership strikes the crucial difficulty of dealing with existing properties. In each instance the company will be opposed and will exert every effort to defeat the project. There will be politics of the bitterest and most sordid type.

Under these circumstances, the governmental body must be particularly clear as to objectives and program. It should be free to negotiate for the purchase of existing properties, to acquire them through condemnation procedure, or to construct new ones if acquisition is not attainable at reasonable terms. It should, of course, be fair to investors, and should take over existing properties at reasonable prices. There should be no confiscation, no duplication of facilities and no wasteful construction.

There are the ideals. What can be accomplished depends upon particular circumstances. The governmental body should have exact knowledge as to reasonable valuation of existing properties and fair price that can be paid. It should also know what is the cost of a new plant, with its superiority in efficiency, in comparison with the old plant. It should have all essential facts needed to negotiate intelligently and to decide upon a wise course of action.

With clear facts and program, and with determination to act, the state or municipality can acquire existing properties at a reasonable price, or on better terms than would be realized through competitive construction. The danger, however, is that it will not be fully possessed of essential facts, will not have a positive program, will proceed hesitantly and partially, and will institute a too limited or too costly system which will prove a flare-back upon public ownership. Here is the trouble with probably the bulk of the many recent proposals. Many follies are in prospect. Exact facts and clear program are essential.

Form of Organization

THE next important matter is form of organization. Mostly public ownership has been included in ordinary municipal or other public departments. For successful management on a comprehensive scale, consideration should be given to a special organization suited to the particular conditions. The plant should have its own financial and operating set-up so that its costs and efficiency can be separately determined.

In most instances it would probably be desirable to organize a special public corporation. While this would be owned and controlled by the governmental body, such a corporation would have the advantage of separate entity in carrying out its specific function. It would have greater flexibility in capital set-up and financial policy, and could better determine the selection of management and personnel in accordance with the needs of the service.

Many who oppose public ownership do so on the ground that a public industry is bound to fall under undesirable political control. If public operation is to be successful, it certainly must be placed under the direction of people devoted to the public service and competent to do the work at hand. Success requires

the keeping out of political spoils and the selection of management and personnel exclusively on the basis of merit. The organization of public ownership within a separate corporate structure would greatly facilitate the elimination of politics. A public corporation could probably be organized and operated more readily on merit than could an ordinary public department.

Territorial Scope

THE final but fundamental consideration in connection with public ownership is that of the territorial scope of any given public system. Heretofore public ownership has been considered mostly from the standpoint of municipal organization. Inasmuch as the services are furnished within municipal boundaries, the tacit assumption has been that organization and operation should likewise come within a municipal grouping.

As presented in an earlier section, effective organization of power calls for a twofold grouping. The first would include all generating and transmission facilities on a statewide basis. The second would cover distribution facilities and operations, and would conform more nearly to municipal boundaries, but should extend over all homogeneous distribution territory.

The general pattern of organization is furnished by the Ontario Hydro-Electric system. This consists, first, of a generating and transmission system owned, financed and operated directly by the Hydro-Electric Commission of Ontario. This is a separate corporate body of the Province of Ontario. It has a comprehensive cost system, which includes not only operating expenses, but also interest and amortization of capital. It delivers electricity at cost to Ontario municipalities, which then own, finance and operate the local distribution plants. Rates are based systematically upon total cost, including payments to the Commission and all costs of distribution.

Under the administration of the Ontario system, rates have been gradually reduced to extremely low levels compared with those in American cities, on the average to about 2 cents per kilowatt hour. In 1933, the charge per kilowatt hour for domestic service was 1.9 cents or less in municipalities selling 86.1 per cent of the electricity used in households and from 2 cents to 3.9 cents in municipalities selling 13.3 per cent of electrical energy

so used.[1] Furthermore, the extent of use is enormously greater in Ontario than in the United States. Under typical American conditions, the average residential consumer, while in Ontario cities the corresponding average is over 150 kilowatt hours. This difference is due to basic economy, low costs, and distinct promotional effort to make power available for all purposes in the homes. The system has far outdistanced any large private company in the United States in the performance of its public function.

State and Municipal Organization

IN the United States a definite power program is necessary. The desirable system is, first, statewide or nationwide public ownership of generation and transmission, through a special state or federal corporation. I lean to a state organization, although such other authorities in the field as Professor James C. Bonbright of Columbia, Vice-Chairman of the Power Authority of the State of New York, urges ultimate federal ownership of generating and transmission lines. State ownership, in my opinion, would permit complete advantage, and would make low cost power available in every part of the state for every important purpose. The various state systems could be readily tied together to convey power from one state to another according to relative availability. Nationally owned systems of large hydro projects, such as the TVA, Boulder Dam and others in the process of organization, could be coordinated with the state systems.

Second, public ownership of distribution should be organized mostly upon a municipal basis, except that this would include all adjacent territory which may be economically combined within the distribution area. Further provisions would be needed for distribution districts in rural territory; comprehensive rural electrification and rural delivery would probably be provided most readily through state organization. This would furnish cheap power to the farms for all agricultural purposes, and such organization is essential if real progress is to be made in rural electrification and rehabilitation of rural industry and life.

How is such a twofold and coordinated system of public

[1] Twenty-sixth Annual Report, Hyro-Electric Power Commission, 1933, p. 407.

ownership to be attained? Certainly an extensive and intensive educational campaign is the first essential. There must be much wider realization of the public function of power, of the defects of present organization and control, of the accomplishments of publicly owned plants, of standards of organization, and of public objectives. Activity might be centered in a state where public opinion is already prepared and where conditions for successful organization are most favorable. Under these circumstances, a sweeping statewide electric campaign would probably furnish the best chance of success. Nor can we ignore the need for the development of a new and more intelligent political alignment as a cardinal need for an effective drive for public ownership in this and other public utilities.

Here is a challenging job of statesmanship throughout the country. Technological advancement has made electric power available practically for all industrial, commercial, agricultural and social purposes, if only organization, management and control are directed to these needs. It furnishes the basis of a real power age with its enormous potentialities for production and welfare, but its translation into accomplishment for the progressive and permanent prosperity of the country depends upon appropriate public organization.

SELECTED BIBLIOGRAPHY

Bauer, John, *Effective Regulation of Public Utilities.* Macmillan. 1925.

Bauer, John, *Standards for Modern Public Utility Franchises.* Municipal Administration Service. 1930.

Bauer, John, and Gold, Nathaniel, *Public Utility Valuation for Purposes of Rate Control.* Macmillan. 1934.

Berle, A. A., and Means, Gardiner C., *The Modern Corporation and Private Property.* Macmillan. 1933.

Bird, Frederick L., *The Management of Small Municipal Lighting Plants* (New York). Municipal Administration Service. 1932.

Bird, F. L., and Ryan, F. M., *Public Ownership on Trial,* New Republic. 1930.

Bonbright, James C., and Means, Gardiner C., *The Holding Company.* McGraw-Hill. 1932.

Dorau, Herbert B., *The Changing Character and Extent of Municipal Ownership in the Electric Light and Power Industry.* Institute for Economic Research. Chicago. 1929.

Gruening, Ernest, *The Public Pays.* Vanguard. 1931.

Hatcher, Harold O., *Within the Law—The Insull Empire.* Pilgrim Press. 1935. 10c.

Laidler, Harry W., *Concentration of Control in American Industry,* Ch. VIII. Crowell. 1931.

Laidler, Harry W., *Public Ownership Here and Abroad.* L.I.D., 1931.

Lambert, C. F., *What* 100 *Representative Cities Pay for Electric Light and Power Under Municipal Ownership.* Burns and McDonnell Engineering Co. 1932.

Levin, Jack, *Power Ethics.* Knopf. 1931.

Malott, E. Orth, *Forces Affecting Municipally Owned Electric Plants in Wisconsin.* Institute for Economic Research. Chicago. 1930.

Mosher, W. E., and others, *Electrical Utilities.* Harper. 1929.

Peck, H. W., "*An Inductive Study of Publicly Owned and Operated Versus Privately Owned But Regulated Electric Utilities.*" Proceedings, American Economic Association, Vol. XIX, No. 1.

Porter, Charles H., "*Public Versus Private Utilities in Massachusetts.*" The Journal of Land and Public Utility Economics, Vol. VII, No. 4. Pp. 394-438.

Public Power for Wisconsin, League of Wisconsin Municipalities. 1930.

Raushenbush, H. S., *The Power Fight.* New Republic. 1932.

Raushenbush, H. S., and Laidler, Harry W., *Power Control.* New Republic. 1928.

Raver, P. J., "*Municipal Ownership and Changing Technology of Electrical Industry.*" The Journal of Land and Public Utility Economics, Vol. VI, No. 3.

Raver, P. J., and Sumner, M. R., *Municipally Owned Electric Utilities in Nebraska.* Institute for Economic Research. Chicago. 1932.

St. Lawrence Power Development Commission, Report of Marketing Board (John Bauer and John P. Hagan). Albany. 1931.

Thompson, Carl D., *The Confessions of a Power Trust.* Dutton. 1932.

Thompson, Carl D., *Public Ownership.* Crowell. 1925.

Wilcox, Delos F., *The Administration of Municipally Owned Utilities.* Municipal Administration Service. 1931.

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